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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/081,517	02/21/2002	Walter Brandenburger	22750/527	1022

26646 7590 06/06/2003

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EXAMINER

ROSENBERG, LAURA B

ART UNIT	PAPER NUMBER
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3616

DATE MAILED: 06/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/081,517

Applicant(s)

BRANDENBURGER, WALTER

Examiner

Laura B Rosenberg

Art Unit

3616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

P r i d f r Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Pri rity under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "42" has been used to designate both bearing supports and stops. Also, the drawings are objected to because features are labeled in a language other than English, specifically references characters 24, 27, and 28. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 6 and 10 are objected to because of the following informalities: the term "their" in "their own accumulator" (claim 6, line 3) and the term "its" in "its accumulator" (claim 10, line 2) should be avoided because these terms are vague. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

Art Unit: 3616

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 12 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The examiner is not certain what is being claimed in claim 12, thus no prior art can be applied to claim 12 until clarification is provided.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites the limitations "the front and rear axles" in lines 1-2, "the piston side" in line 4, "the cylinder transverse combination" in lines 8-9, and "the cross combination" in line 9; claim 4 recites the limitations "the reduced-load front axle" in lines 2-3 and "the loaded front axle" in line 5; claim 12 recites the limitation "the connecting lines" in line 2; claim 16 recites the limitation "the stops" in line 2; claim 17 recites the limitations "the blocked accumulators" in lines 1-2 and "the switchover pressure level" in lines 2-3. There is insufficient antecedent basis for these limitations in these claims.

Art Unit: 3616

Also, claim 2 claims that "both axle suspensions" of the front and rear axles are switchable as a stabilizing axle. However, claim 1 only claims "a hydropneumatic, level-regulated axle suspension" for the front and rear axles being switchable as an oscillating axle or a stabilizing axle. It is unclear if there is a single suspension for both front and rear axles or if there are separate suspensions for the front and rear axles. If the applicant is claiming that the front and rear axles are switchable as a stabilizing axle, then claim 2 does not further limit claim 1 (refer to lines 7-9 of claim 1) and claim 2 should be canceled. The examiner would appreciate help in better understanding what features are being claimed in claim 2.

Further, the phrase "may also be secured if necessary" in line 3 of claim 16 is vague and indefinite. It is unclear from the specification, drawings, and claims when exactly it would be necessary to secure the stops and how this would take place.

In addition, in regards to claim 14 it is unclear if the applicant is claiming that there is approximately the same pressure in the cylinder space of a cylinder as in the annulus of the same cylinder when switching occurs, there is approximately the same pressure in different cylinders at the time of the switching, or if something else is being claimed. The examiner request clarification of claim 14.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 3616

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. (5,709,394) in view of Heyring (5,480,188). In regards to claims 1-3 and 6-9, Martin et al. disclose a hydropneumatic, level-regulated axle suspension for front (#56) and rear (#55) axles on a vehicle (#1) comprising double-acting hydraulic suspension cylinders (#17, 18, 23, 24), wherein the axle suspension for the front axle and the rear axle is designed as a reversible double-function axle suspension, so that each axle (#55, 56) is switchable as an oscillating axle or as a stabilizing axle (best seen in figure 4), the switching being alternating so that switching one axle as an oscillating axle results in simultaneous switching of the other axle as a stabilizing axle. Martin et al. do not specifically disclose the cylinders connected to pressure accumulators. Heyring teaches a hydropneumatic, level-regulated axle suspension for front and rear axles on a vehicle (#5) comprising double-acting hydraulic suspension cylinders (#13, 14, 17, 18, 41- 44), whose cylinder spaces (#13a, 14a, 17a, 18a, 41a- 44a) are each connected to a first pressure accumulator (#21, 22, 25, 26, 50-53) and an additional pressure accumulator (#21, 22, 25- 27, 30, 50-55) and whose annuli on the piston side (13b, 14b, 17b, 18b, 41b- 44b) are connected to a second pressure accumulator (#27, 30, 54, 55). It would have been obvious to one skilled in the art at the time that the invention was made to modify the suspension of Martin et al. such that it comprised accumulators as claimed in view of the teachings of Heyring so as to provide resilience in the suspension and resist shock loading in the event that the axles are thrust down (Heyring: column 5, lines 32-36, 42-47).

In regards to claim 4, Martin et al. disclose the axles being switched to oscillating axles when a load is reduced on that axle and a stabilizing axle when a load is increased on that axle. Specifically, when the vehicle encounters uneven terrain, the load is increase on one of the axles, that axle becoming the stabilizing axle while the other axle becomes the oscillating axle.

In regards to claims 5 and 11, Martin et al. disclose the axle suspension of the stabilizing axle being blocked (column 4, lines 59-67; column 5, lines 25-33). Martin et al. does not disclose the axles suspensions being blocked by isolating the suspension accumulator. Heyring teaches isolating the suspension accumulators when under an increased load and needed to stabilize the axle (column 5, lines 57-67). It would have been obvious to one skilled in the art at the time that the invention was made to modify the suspension of Martin et al. such that it comprised an isolation of the accumulator as claimed in view of the teachings of Heyring so as to reduce the resilience of the axle when it is under an increase load (Heyring: column 5, lines 57-67).

In regards to claim 10, Martin et al. disclose the cylinder space of one suspension cylinder being connected to the annulus of another suspension cylinder (via connecting lines #30, 31). Martin et al. does not disclose an accumulator of the cylinder space connectable to the annulus of another suspension cylinder. Heyring teaches the cylinder space (#13a, 14a, 17a, 18a) of one suspension cylinder and the associated accumulator (#21, 22, 25, 26) being connectable to the annulus (#13b, 14b, 17b, 18b) of another suspension cylinder. It would have been obvious to one skilled in the art at the time that the invention was made to modify the suspension of Martin et al. such that it

Art Unit: 3616

comprised a connection between cylinder spaces, accumulators, and annulus spaces as claimed in view of the teachings of Heyring so as to control pressure between cylinders through the use of the accumulators.

In regards to claim 13, Martin et al. disclose switching from oscillating axle suspension to stabilizing axle suspension being done as a function of the pressure in the cylinder spaces. Specifically, the pressure is determined and controlled by the hydraulic control means (#26), the pressure relief valve (#45), the electrical command means (#49), and the sensor (#91).

In regards to claim 14, Martin et al. disclose the switching being done at approximately the same pressures in the cylinder spaces and the annuli of the suspension cylinders. Specifically, the electrical command means (#49) and the sensor (#91) control the control valves (#38, 39, 85) and the control valves control the connection and disconnections of the cylinders. Thus, the switching would always be accomplished at approximately the same pressure.

In regards to claim 15, Martin et al. disclose the design of the front and rear axle suspensions being identical.

In regards to claim 16, Martin et al. disclose that the axles (#55, 56) may be pressed against stops (#A, B, D, E) for the purpose of blocking the suspension and they may be secured.

In regards to claim 17, Martin et al. disclose the blocked cylinders being regulated and kept at the switchover pressure level by a pressure regulating valve (#38, 39, 85). Martin et al. do not disclose using this valve in the same manner for an

Art Unit: 3616

accumulator. Heyring teaches pressure regulating means (column 6, lines 5-38) for use with accumulators. It would have been obvious to one skilled in the art at the time that the invention was made to modify the suspension of Martin et al. such that it comprised a pressure regulating valve as claimed in view of the teachings of Heyring so as to vary or stop the flow of fluid between relevant cylinders (Heyring: column 6, lines 14-21).

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Thall, Hanna, Mercier, Bryansky et al., Richard, Karnopp et al., Haupt, Runkel, Sonehara, Reybrouck, Heyring et al., Sekine et al., Clare et al., Griebel et al., Rogala, Schroder, Glaser et al., and Martin et al. disclose axle suspension systems.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura B Rosenberg whose telephone number is (703) 305-3135. The examiner can normally be reached on Monday-Thursday, alternating Fridays 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Dickson can be reached at (703) 308-2089. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9326 for regular communications and (703) 872-9327 for After Final communications.

Art Unit: 3616

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

Lana B. Ry

LBR
June 2, 2003

Paul N. Dickson 6/2/03

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